

Scarless Mastopexy with Lightweight Breast Implants

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Keywords

Scarless, Mastopexy, Lightweight, Breast Implant, Augmentation

Introduction

Breast ptosis is the result of reduced elasticity of the breast tissue over time causing the nipple areola complex to descend to a position that is level with or below the inframammary fold. As described by Regnault, breast ptosis results from a discrepancy between breast volume and the overlying skin envelope [1]. This can be resolved surgically by increasing the breast volume, reducing the skin envelope, or a combination of both by performing an augmentation/mastopexy. Breast augmentation is the most commonly performed surgical procedure in aesthetic plastic surgery. According to the American society of Plastic Surgeons Plastic Surgery Statistics Report, 300,378 such procedures were conducted last year, with mastopexy procedures at a count of 105,219 surgeries [2]. Breast augmentation alone may correct minimal ptosis or pseudoptosis, however, a significant number of patients who present for breast augmentation also need breast lifting. Increasing patient demand for the convenience of undergoing one procedure in place of two has led to the growing popularity of the combined augmentation-mastopexy operation. However this procedure is associated with a high degree of difficulty and has several limitations. Increasing the volume of the breast while simultaneously decreasing the skin envelope equates to surgery involving opposing forces. This results in a relatively long operation time with the associated additional costs, an increased risk of perioperative complications, and most importantly unpleasant scars and the high likelihood of a recurrence of the ptosis.

Summary

The degree of ptosis depends on the characteristics of the breast tissue. Some women have breast tissue with relatively high compliance (the capacity to stretch) and low resilience (the capacity to maintain the shape of the breast under a constant stretching force i.e. weight). These women are more predisposed to creep deformation of their breasts resulting in ptosis [3]. Since mastopexy does not alter such tissue characteristics, they are also likely to develop ptosis again after mastopexy. As van Deventer and colleagues have pointed out, most current mastopexy procedures to correct ptosis rely on atrophied tissue for support, so may result in recurrent ptosis and unsatisfactory long-term appearance [4]. After mastopexy-implantation procedures, the implant may stretch the breast tissue, elongating it in the lower aspect of the breast resulting in an unpleasant bottoming out effect on the breast shape. The larger the implant weight, the greater the creep deformation and consequently the more unstable long-term result. Protection of the breast tissue over time can therefore be achieved by reducing the implant weight [5]. The use of the promising new B-lite lightweight implant* which for a given volume, weighs as much as 30% less than traditional silicone implants, has significantly reduced breast tissue stretching and consequent re-operation rates. The detrimental effects of implant weight are commonly known and described in the literature [5]. Reducing the forces of gravity have a beneficial effect on any soft tissues. However, the need for reduced weight is especially pressing in the case of the ptotic breast tissue. Thus reducing the stress load to the skin envelope is essential to prevent stretching and reducing the implant weight may reduce or prevent the recurrence of ptosis.

Women presenting for mastopexy are primarily concerned with achieving a natural and youthful aesthetic appearance of their breasts and so the extent of scarring from such surgeries is a major concern. Switching a ptotic breast for a scarred breast is for most women an unsatisfactory outcome. Periareolar and vertical techniques may leave visible scars, and may also affect nipple sensitivity and possibly lactation. Furthermore, obvious scars may appear on suture lines where tension has been transferred from stretching the breast skin to maintain shape [5]. In order to eliminate visible scarring that is so vital for our patients, we developed a simplified internal mastopexy procedure as an alternative to the more difficult traditional external route. Our procedure is indicated for patients with mild to moderate ptosis.

Article Information

DOI: 10.31021/ijsp.20181107
Article Type: Short Communication
Journal Type: Open Access
Volume: 1 **Issue:** 2
Manuscript ID: IJSP-1-107
Publisher: Boffin Access Limited

Received Date: May 08, 2018
Accepted Date: May 22, 2018
Published Date: May 24, 2018

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Citation: Govrin-Yehudain O, Govrin-Yehudain J. Scarless Mastopexy with Lightweight Breast Implants. Int J Surg Proced.2018 May; 1(2):107

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Description of the Technique

Firstly, an inframammary incision is created and then the breast is released from the pectoralis major muscle. It is important to release the breast completely in both the medial and lateral aspects to enable free movement. This is followed by a superior dissection up until the top part of the pectoralis major 3-4 cm below the clavicle creating a pocket above the muscle. Using a 2-0 Vicryl suture, the needle is inserted into the upper part of the pectoralis major and then lowered down into the breast tissue, approximately 2 cm above the nipple internally. At that point, the suture loop is tied tightly which lifts the breast superiorly. An additional two stitches are inserted in the same manner in order to secure the position of the tissues (but do not provide any further lift). The inframammary fold is secured with a 3-0 Vicryl suture. Finally, the B-lite lightweight implant is inserted. We also recommend the use of a supportive bra for at least 3 months. (Figure 1) illustrates the stages of the procedure.

A slight excess of skin in the lower pole can be managed by using a crescent resection of tissue at the site of the (IMF) incision. If there is a significant excess of skin in the lower pole, traditional mastopexy should be considered.

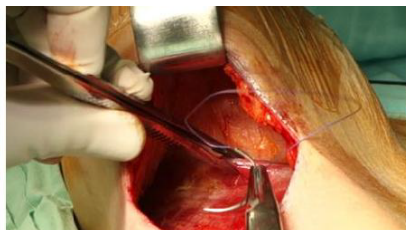
The advantages of our technique are that it creates a fullness to the breast in the upper pole; it does not affect lactation or nipple sensitivity; it reduces the need for revisional surgeries since the B-lite implant provides long-term protection from loading stress on the

breast tissue; and most importantly, does not leave a mastopexy scar on the breast (Figure 2). The method described is a subglandular, single plane approach useful when there is sufficient tissue coverage. We have also developed a similar procedure which we have named "the Elevator". This modified dual plane method, also described independently by Stan and Biggs [6], creates a pocket for the implant behind the pectoralis major muscle and separates the breast from the muscle anteriorly, followed by a fixing of the breast tissue to the muscle in an elevated position. The "Elevator" method and clinical results will be described in a subsequent publication.

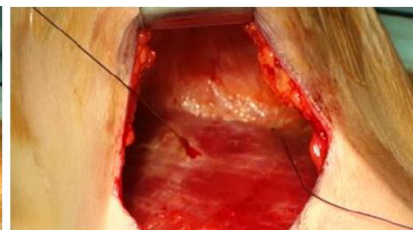
The currently described surgical procedure does not increase complication rates in our practice, when compared with straightforward breast augmentations. In about 7-8% of cases, minimal dimpling of the breast appears shortly after surgery, and normally disappears within weeks. Additionally there is slightly more pain in the first days after surgery due to the sutures in the pectoralis major. It is a simple, safe, reproducible procedure that reduces the operating time by approximately 60 minutes compared to most other mastopexy techniques. Furthermore, we have been able to reliably and safely correct mild to moderate ptosis and nipple-areola complex position. We have performed this procedure on over 256 patients; with a follow-up of up to 43 months. Patients have expressed high satisfaction with the procedure. The described Scarless Mastopexy technique can thus be safe and effective when matched to favorable indications.



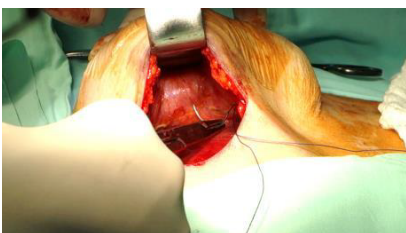
1. Create a pocket, release the breast from the pectoralis major, superiorly till 2-3 cm beneath the clavicle



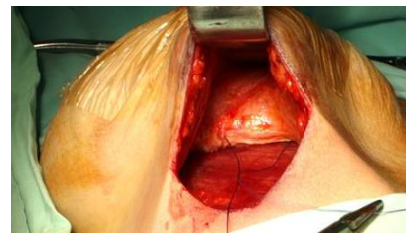
2. Using a 2.0 Vicryl suture, insert the muscle needle in the upper part of the pectoralis major muscle



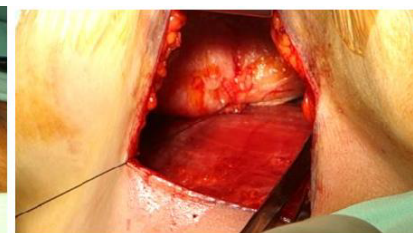
The suture in the pectoralis major



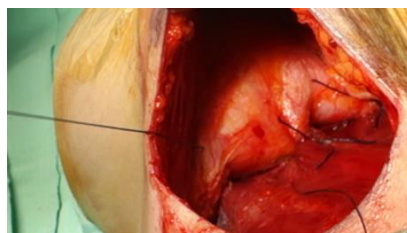
3. Insert the needle into the breast tissue approximately 2 cm above the nipple to create a loop



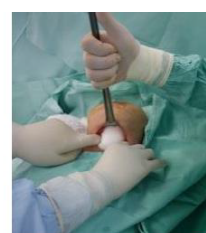
Ensure that the suture has passed through the pectoralis major muscle and breast tissue



4. Tie the suture tightly to lift the breast superiorly



5. Add another two sutures in the same manner to secure the position of the tissues



6. Insert the B-lite lightweight implant

Figure 1: The simplified internal scarless mastopexy technique with lightweight breast implants



R	325cc	241gram
L	345cc	256gram

Case1:
Moderate ptosis repaired
with scarless mastopexy,
37 months



R	325cc	241gram
L	325cc	241gram

Case 2:
Moderate to severe ptosis
repaired with scarless
mastopexy, 25 months



R	460cc	345gram
L	390cc	288gram

Case 3:
Assymetry with ptosis of the
left breast. Augmentation of
the right breast and scarless
mastopexy on the left breast
only, achieving symmetry of
the breasts, 19 months



Figure 2: Example results of scarless mastopexy with lightweight implants

We therefore propose that our novel internal mastopexy technique combined with the implantation of a light weight implant can be a valuable procedure in patients with mild to moderate ptosis. By understanding the breast's anatomy and repositioning of the breast mound with the help of the pectoralis major muscle to create an internal lift, our procedure has provided consistent aesthetically pleasing results without scarring. The use of a lightweight implant is vital to prevent stress-related recurrence of ptosis and the need for further surgeries. Additional follow-up with more patients will establish the long-term durability of this procedure.

Conflict of Interest

Dr. Jacky Govrin-Yehudain is President of G&G Biotechnology Ltd., the company that developed the B-Lite implant mentioned in this article.

*The authors discuss a device that is not currently FDA-approved and is not available in the USA.

Funding

The authors received no financial support for the research, authorship, and publication of this article.

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